

# The Rhode Island Common Core of Learning and the Rhode Island Science Framework

The Rhode Island Science Framework is the product of the work of hundreds of individuals over a three year period. It presents a rationale for the importance of science within the K-12 school curriculum, suggests ways in which science teaching and learning can be supported by the larger system, and addresses issues related to science content, assessment of science learning, evaluation of a school's or district's science program, and provides resources for information and technical assistance.

The science framework links directly to, and expands upon, the state's Common Core of Learning as it relates to science education. The Common Core forms the remainder of this opening chapter within the framework.

In 1992 the Board of Regents and the Commissioner of Elementary and Secondary Education convened Rhode Island's Common Core of Learning team, composed of over 100 parents, educators, civic, business, and corporate leaders. Together they researched the issues and conducted focus groups around the state. This work led to the development of a survey asking "*what should all young adults in Rhode Island know and be able to do to meet the responsibilities and challenges of the 21st century?*".

The responses were tabulated and distilled into a document which represents the collective thinking of the citizens of our state about the goals of education, and is included here in its entirety.

The respondents identified four major goals of education in Rhode Island:

*Communication:* reading, writing, speaking, listening and conversing effectively.

*Problem Solving:* viewing learning as a lifelong process in which problem solving complements the body of knowledge by helping students acquire and apply new knowledge.

*Body of Knowledge:* acquiring ideas and skills that have been passed on by past generations and that form the base for the future progress of society.

*Responsibility:* accepting responsibility for one's self, one's learning, and one's role in society.

These areas are four dimensions of a whole, rather than discrete segments that can be selected piecemeal. They balance knowledge of content, skills and attitudes. Thus, students in their science studies concurrently should acquire a body of knowledge while communicating their learning, solve current science- and technology-related problems, and take responsibility for their learning while also engaging in socially responsible behavior. The learning goals of the Common Core form the basis for the development of more explicit state curriculum documents such as this science framework. (The mathematics framework and a draft language arts framework are also presently available.)

The science framework, referencing the Benchmarks for Science Literacy of the American Association for the Advancement of Science which it adopts as a base, can be conceptually linked to the four main areas of the Common Core of Learning in the following manner:

*Communication:* Benchmarks chapters 8 and 12

*Problem Solving:* Benchmarks chapter 1, 2, 3, and 12

*Body of Knowledge:* Benchmarks chapters 1 through 10

*Personal and Social Responsibility:* Benchmarks chapters 3, 6, 7, and 12

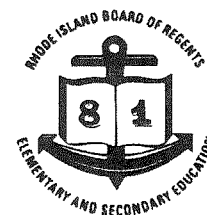
# DEVELOPING A COMMON CORE OF LEARNING



## A Report On What We Heard

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\* \* PREAMBLE \* \*

.....  
***What the best and wisest parent wants for his own child,  
that must the community want for all of its children.***

--- John Dewey

.....  
Historically, Rhode Island has expected much from its educational system. In the future we will expect even more. The needs of a changing society place new and greater demands on students and on schools. Both must prepare for a future we cannot truly envision. Schools must prepare students not only to work, but to live, in the 21st century.

It is important to ask how well our current educational system has served Rhode Island, and how it must be improved and changed. Our speculations about life in the future are tested against what sociologists, economists, scientists and artists tell us that we may expect. Each of us filters these ideas through our own cultural, political and family experiences. We question what we will require from our educational institutions. How will we earn our livelihoods? What advances in technology, transportation, health, the arts and recreation will influence the way we live?

*Developing A Common Core of Learning - A Report on What We Heard* pays its respects to our past at the same time that it represents our promise to the future. ALL KIDS, not just some kids, deserve the best education. With this in mind together we will create an educational system that renews our society and prepares Rhode Island for the future.



## INTRODUCTION ...

Three important events provide the foundation of Rhode Island's Common Core of Learning. The nation's Governors drafted "America 2000" goals (now called *Goals 2000*) in 1989. In March 1994, these national educational goals were finally enacted into law. At the state level, the 21st Century Commission and the Rhode Island Skills Commission each drafted plans for the restructuring of Rhode Island's educational system and called for the citizens of the state to establish learner goals and high standards of performance for all of our students.

In 1992, the Board of Regents and the Commissioner of Elementary and Secondary Education convened Rhode Island's Common Core of Learning Team, comprised of over 100 parents, educators, civic, business and corporate leaders. Together they researched the issues and conducted focus groups around the state. This work led to the development of a survey printed in five languages, and 200,000 were distributed throughout the state. It asked, "*What should all young adults in Rhode Island know and be able to do to meet the responsibilities and challenges of the 21st Century?*"

The responses were tabulated. Writers drawn from the larger team distilled the collected thoughts expressed by the respondents into Rhode Island's Common Core of Learning. This document represents the collective thinking of the citizens of our state about the goals of education.

The respondents identified four major goals of education in Rhode Island:

**Communication** - reading, writing, speaking, listening and conversing effectively.

**Problem Solving** - viewing learning as a lifelong process in which problem solving complements the body of knowledge by helping students acquire and apply new knowledge.

**Body of Knowledge** - acquiring ideas and skills that have been passed on by past generations and that form the base for the future progress of society.

**Responsibility** - accepting responsibility for oneself, one's learning, and one's role in society.

These areas are four dimensions of a whole rather than discrete segments that can be selected piecemeal. They balance knowledge of content, skills and attitudes. Thus, students in their studies concurrently acquire bodies of knowledge while communicating new learning, solving current problems and taking on responsibilities related to their learning. These goals form the basis for developing more explicit curriculum documents.

Rhode Island's Common Core of Learning is intended to guide schools and classroom teachers in the design of curriculum and instruction. It has a second and equally important purpose: to provide a forum for discussion among educators and the general public. We must share a common vision and direction for education in our state if it is to serve us all equally well.

## COMMUNICATION

*"It is imperative that good oral and written communication skills are stressed."*

(respondent #00361)

*"Communication via written words, oral expression or computer transmission will be a necessity in the 21st century."*

(respondent #02584)

One of the hallmarks of an educated person is the ability to read, write, speak, listen, and converse effectively. People with well-developed communication skills understand others and express themselves well. In addition, they give and receive constructive feedback, adapting their words and actions as reason and circumstances dictate.

*Students who have acquired a common core of communication skills will...*

Read widely and attentively by ...

- Reading for a variety of purposes: to gain understanding, to appreciate the experience of others, to gather information and to enjoy leisure time.
- Building meaning while reading, determining the relative importance of ideas and connecting what is read to prior knowledge, other sources and their own experiences.
- Reading critically: distinguishing fact from opinion, identifying inconsistencies and recognizing bias.
- Utilizing reference materials, both print and electronic (e.g. dictionaries, encyclopedias, atlases, and original sources via Internet) and features of written and electronic texts (e.g. tables of contents, indices, chapters, headings and electronic search strategies).
- Following written instructions.

Write persuasively and expressively by ...

- Writing for a variety of purposes and audiences.
- Writing as a way of discovering and clarifying ideas.
- Engaging in a process that involves planning, organizing, revising and editing one's own writing.
- Supporting ideas through the use of facts, examples, quotations and arguments.

### Communication (continued)

- Gathering information, taking accurate notes and summarizing accurately, noting sources properly.
- Using correct spelling, punctuation, grammar and other language conventions.
- Making use of print and electronic reference tools, such as handbooks and grammar and spelling checking programs, to locate language conventions.
- Using technology and software including text, data, graphics and communication, to produce documents.

### Speak, listen and converse intelligently by ...

- Listening and conversing in order to share information, build relationships and promote understanding
- Engaging constructively in oral exchange of ideas.
- Asking and answering questions.
- Delivering oral presentations to a group, using appropriate language, information, gestures and media.
- Conducting and being the subject of an interview.
- Forming, expressing, and defending a point of view.
- Giving, understanding and following spoken instructions.
- Listening carefully and giving constructive feedback.
- Communicating with others using electronic media (e.g., audio, video, Internet).
- Communicating with others in more than one language.
- Communicating with people from various social, occupational and cultural groups.
- Working to clarify misunderstandings and to resolve conflicts peacefully and democratically.
- Understanding the impact of one's language on others.

## PROBLEM SOLVING

***"They should be able to reason a problem out in a step-by-step fashion until a worthwhile solution is reached."***  
(respondent #00527)

A rapidly changing world requires all people to be lifelong learners and problem solvers. Along with the common body of knowledge and skills needed for a productive life, students need to learn continuously and apply what they have learned critically and creatively to solve real life problems. Lifelong learning and problem solving are not separate from the common body of knowledge that comprises the content of schooling; rather, they complement it by helping students to acquire new knowledge and to apply it in original and effective ways.

***Students who have acquired a common core of problem solving skills will ...***

**Learn continuously by ...**

- Setting high standards in developing personal learning goals.
- Accepting and pursuing challenges - stretching personal limits.
- Working cooperatively and/or independently as the situation demands.
- Using learning approaches that are suitable to personal, community, and work related settings.
- Giving, receiving, and evaluating constructive criticism.
- Learning from failure.

**Solve problems effectively by ...**

- Defining a problem, posing meaningful questions, generating and testing alternative hypotheses, establishing criteria for measuring success, and determining a course of action.
- Planning and organizing a problem solving task requiring multiple steps, sustained concentration and long term commitment.
- Demonstrating flexibility, inventiveness and persistence, revising a problem solving plan as needed.
- Seeking advice and information, presenting data and analyses, persuading others of a particular course of action and modifying plans in light of the input of others.

*Problem Solving (continued)*

- Using appropriate techniques and technologies in acquiring new knowledge and skills and in researching and solving a problem.
- Observing, selecting and recording meaningful data.
- Accessing, applying, interpreting, recording, evaluating and integrating information from a variety of sources and subject areas.
- Questioning the validity of sources, recognizing fallacies, detecting a writer's or a speaker's point of view and examining how facts and language are being used.
- Considering and weighing diverse perspectives, then defending a decision to accept, reject or modify each.
- Employing a range of strategies, including those which involve the application of technologies.
- Evaluating the quality and success of their own work.

## BODY OF KNOWLEDGE

***"Successful education can be a blend of teamwork, skills, historical knowledge, scientific application, including the use of technology and multicultural awareness. The elements are not presented piecemeal but are taught in context."***  
(respondent #01937)

People today build upon the ideas and skills of the civilization that went before them. This Body of Knowledge forms the base for schooling in the modern world. This schooling relies on a knowledge of human thought and creativity from historical, scientific and social perspectives. The focus here is the application of knowledge in improving the quality of life for the individual in the community, workplace and society. The statements in this section are not intended to be an exhaustive catalog of subjects or precise content standards, but they suggest the general knowledge that all students should acquire and be able to apply.

### ***Students who have acquired this body of knowledge will ...***

#### **Know about themselves by ...**

- Understanding the workings of the human body and mind in order to maintain personal health.
- Applying information and skills that enable successful functioning in everyday tasks.
- Developing skills necessary for employment.

#### **Know about others by ...**

- Understanding the American political system in order to fulfill the duties of citizenship for personal and community purposes.
- Understanding the principles of the American economic system that allows the individual to participate in and benefit from that system.
- Showing an appreciation of their own culture and the culture of others, knowing the influence of cultural differences upon human interaction and having the ability to employ this understanding in improving cross-cultural relations.
- Understanding the influence of religious views and values on past and present society.

### Body of Knowledge (continued)

- Developing an understanding of literature and the arts as a reflection of values shaped by social or historical forces.
- Appreciating the major art forms: drama, dance, music and the visual arts.
- Having a basic understanding of the history and structure of the English language.

### Know about the natural world by ...

- Demonstrating an understanding of people's relationship to the environment, the influence of the environment on human life and the use of the environment in conserving and improving life.
- Understanding key concepts of mathematics, science and technology; the relationships between and among them; and their strengths and limitations.
- Recognizing the impact of technology on the workplace and society, including implications for the environment.
- Recognizing the importance of mathematics, science and technology in daily life.
- Interacting and communicating confidently with others in using mathematics, science and technology to ask and answer relevant questions.
- Using scientific processes, mathematical reasoning and technology to solve problems and build an understanding of the natural world.

## RESPONSIBILITY

***"I believe that all young adults should #1 learn how to accept responsibility for their actions both academically and socially."*** (respondent #00142)

A pillar of the Common Core of Learning must be responsibility. The 21st Century will require citizens to take responsibility for themselves, their learning and their society. By gaining an awareness of their responsibilities to themselves as individuals and to society as a whole, the youth of Rhode Island will be better equipped to meet the challenges of tomorrow.

All Rhode Islanders, therefore, must be encouraged to take responsibility for their lives and the role each will play in society. As lifelong learners they will act on goals that they set for themselves, develop healthy habits and establish positive relationships, at home, in the workplace and in the community. They will develop personal characteristics that enable them to become good citizens, family members, and parents, as well as productive workers.

*Students who exhibit responsible behavior will ...*

*Accept personal responsibility for the well being of self and society by ...*

- Developing habits to ensure physical, emotional and mental health.
- Making informed career and life decisions.
- Developing strategies to manage stress.
- Coping successfully with negative peer pressure and media influences.
- Making and keeping healthy relationships.
- Buying and consuming responsibly.
- Understanding how technology affects human culture, the workplace and the environment.
- Being aware of our interdependence with the environment.

*Work responsibly in groups and as an individual by ...*

- Working cooperatively with others in achieving a group decision or goal.
- Sharing, delegating, leading, contributing and following through.
- Respecting opposing points of view.
- Carrying through responsibilities and completing tasks.
- Knowing how and when to negotiate or compromise to reach a consensus.
- Using technology appropriately.



### Responsibility (continued)

Acquire the necessary skills, competencies and personal qualities to succeed in the workplace by ...

- Understanding the multiple pathways through which one may prepare for various careers.
- Applying the body of knowledge, communication and problem solving approaches appropriately in one's occupations.
- Understanding the value of labor and developing a work ethic.
- Managing time and resources effectively.
- Being flexible in adapting to new situations, analyzing information, and solving problems through the use of existing and emerging technology.
- Setting high personal standards for quality work which satisfies the needs of clients and customers.
- Demonstrating dependability, honesty, productivity, leadership and initiative.

Show tolerance for human diversity by ...

- Learning about differences among people, religions and cultures.
- Understanding the causes of prejudice and its contribution to social injustice.
- Showing courtesy towards others.
- Respecting the rights of all people.

Understand the importance of family and community by ...

- Practicing the duties and responsibilities of citizenship.
- Engaging in meaningful service to the community.
- Understanding the ethical dimensions of citizenship and parenting.

Respond to challenges with integrity, honesty, and courage by ...

- Maintaining high standards of academic honesty.
- Acting in an honest manner when dealing with others.
- Accepting responsibility for personal decisions and actions.
- Setting priorities and accepting responsibilities in the home, family and community.

Display a strong sense of self-worth and personal competence by ...

- Exhibiting self-respect and respect for others.
- Relying on strong interpersonal skills.
- Setting challenging, realistic goals.
- Knowing his or her own heritage.
- Developing and pursuing personal interests and goals.